Claims

What is claimed is:

1. A method of reconfiguring a network having a plurality of nodes to reflect a change in topology of said network, said method comprising:

upon receiving a reconfiguration request at one node of said plurality of nodes, entering a quiescent state at said one node, wherein said one node remains in said quiescent state for a predetermined period of time sufficient to allow at least one other node of said plurality of nodes to also enter a quiescent state; and

upon termination of said quiescent state at said one node, reconfiguring said one node to reflect said change in topology of said network without checking with said at least one other node.

2. The method of claim 1, wherein said predetermined period of time comprises an amount of time sufficient to transmit a reconfiguration request from said one node to said at least one other node, wherein receipt of said reconfiguration request causes said at least one other node to enter a quiescent state.

3. The method of claim 1, wherein said predetermined period of time comprises an amount of time sufficient for protocols currently running on said network to complete execution.

4. The method of claim 3, wherein said protocols comprise one of a heart beat, join, death, or node reachability protocol.

5. The method of claim 1, wherein said predetermined period of time comprises an amount of time sufficient for a protocol currently running on said network to perform a predetermined number of retries plus a predetermined amount of time between each retry, wherein after attempting said predetermined number of retries, said protocol completes execution.

6. The method of claim 5, wherein said protocol comprises one of a heart beat, join, death, or node reachability protocol.

7. The method of claim 1, wherein said reconfiguring said one node occurs without any communication to said node from said at least one other node of said plurality of nodes.

8. The method of claim 1, wherein said reconfiguring said one node comprises refraining from observing said change in topology at said one node during a grace period, wherein said grace period comprises a predetermined period of time sufficient to allow said at least one other node of said plurality of nodes to exit a quiescent state, and upon termination of said grace period, observing said change in topology at said one node.

9. The method of claim 1, wherein said reconfiguration request results from addition or removal of a node or of at least one other network to said network.

10. The method of claim 1, where said reconfiguration request results from a change in address of a node of said network.

11. The method of claim 1, wherein said network is reconfigured without interrupting currently executing protocols.

12. The method of claim 1, wherein said network is reconfigured without a global synchronization protocol.

13. The method of claim 1, further comprising transmitting, upon entering said quiescent state, a reconfiguration request from said one node to said at least one other node, wherein receipt of said reconfiguration request causes said at least one other node to enter a quiescent state.

14. The method of claim 13, wherein said reconfiguration request comprises one of a message having a reconfiguration sequence identifier and a message having a configuration sequence

identifier different from a configuration identifier of said one node.

15. The method of claim 1, wherein said network comprises a plurality of interconnected computing networks together implementing a distributed node and adapter status monitoring system.

16. The method of claim 1, further comprising preventing, by said node when in said quiescent state, execution of new protocols by ignoring proclaim, join, node connectivity, and group connectivity messages and by no longer monitoring heartbeat messages.

17. The method of claim 1, further comprising transmitting, by said node when in said quiescent state, proclaim, heartbeat, node connectivity, and group connectivity messages with a reconfiguration sequence identifier to propagate reconfiguration requests to said at least one other node.

18. A system for reconfiguring a network having a plurality of nodes to reflect a change in topology of said network, said system comprising:

means for entering, upon receiving a reconfiguration request at one node of said plurality of nodes, a quiescent state at said one node, wherein said one node remains in said quiescent state for a predetermined period of time sufficient to allow at least one other node of said plurality of nodes to also enter a quiescent state; and

means for reconfiguring, upon termination of said quiescent state at said one node, said one node to reflect said change in topology of said network without checking with said at least one other node.

19. The system of claim 18, wherein said predetermined period of time comprises an amount of time sufficient to transmit a reconfiguration request from said one node to said at least one other node, wherein receipt of said reconfiguration request causes said at least one other node to enter a quiescent state.

20. The system of claim 18, wherein said predetermined period of time comprises an amount of time sufficient for protocols currently running on said network to complete execution.

21. The system of claim 20, wherein said protocols comprise one of a heart beat, join, death, or node reachability protocol.

22. The system of claim 18, wherein said predetermined period of time comprises an amount of time sufficient for a protocol currently running on said network to perform a predetermined number of retries plus a predetermined amount of time between each retry, wherein after attempting said predetermined number of retries, said protocol completes execution.

23. The system of claim 22, wherein said protocol comprises one of a heart beat, join, death, or node reachability protocol.

24. The system of claim 18, wherein said means for reconfiguring said one node reconfigures without any communication to said node from said at least one other node of said plurality of nodes.

25. The system of claim 18, wherein said means for reconfiguring said one node comprises means for refraining from observing said change in topology at said one node during a grace period, wherein said grace period comprises a predetermined period of time sufficient to allow said at least one other node of said plurality of nodes to exit a quiescent state, and upon termination of said grace period, for observing said change in topology at said one node.

26. The system of claim 18, wherein said reconfiguration request results from addition or removal of a node or of at least one other network to said network.

27. The system of claim 18, where said reconfiguration request results from a change in address of a node of said network.

28. The system of claim 18, wherein said network is reconfigured without interrupting currently executing protocols.

29. The system of claim 18, wherein said network is reconfigured without a global synchronization protocol.

30. The system of claim 18, further comprising means for transmitting, upon entering said quiescent state, a reconfiguration request from said one node to said at least one other node, wherein receipt of said reconfiguration request causes said at least one other node to enter a quiescent state.

31. The system of claim 30, wherein said reconfiguration request comprises one of a message having a reconfiguration sequence identifier or a message having a configuration sequence identifier different from a configuration identifier of said one node.

32. The system of claim 18, wherein said network comprises a plurality of interconnected computing networks together implementing a distributed node and adapter status monitoring system.

33. The system of claim 18, further comprising means for preventing, by said node when in said quiescent state, execution of new protocols by ignoring proclaim, join, node connectivity, and group connectivity messages and by no longer monitoring heartbeat messages.

34. The system of claim 18, further comprising means for transmitting, by said node when in said quiescent state, proclaim, heartbeat, node connectivity, and group connectivity messages with a reconfiguration sequence identifier to propagate reconfiguration requests to said at least one other node.

35. A system for reconfiguring a network having a plurality of nodes to reflect a change in topology of said network, said system comprising:

a computing node capable of entering, upon receiving a reconfiguration request at one node of said plurality of nodes, a quiescent state at said one node, wherein said one node remains in said quiescent state for a predetermined period of time sufficient to allow at least one other node of said plurality of nodes to also enter a quiescent state; said computing node further being capable of reconfiguring, upon termination of said quiescent state at said one node, said one node to reflect said change in topology of said network without checking with said at least one other node.

36. An article of manufacture comprising:

a computer useable medium having computer readable program code means embodied therein for reconfiguring a network having a plurality of nodes to reflect a change in topology of said network, said article of manufacturing comprising:

computer readable program code means for entering, upon receiving a reconfiguration request at one node of said plurality of nodes, a quiescent state at said one node, wherein said one node remains in said quiescent state for a predetermined period of time sufficient to allow at least one other node of said plurality of nodes to also enter a quiescent state; and

computer readable program code means for reconfiguring, upon termination of said quiescent state at said one node, said one node to reflect said change in topology of said network without checking with said at least one other node.

37. The article of manufacturing of claim 36, wherein said predetermined period of time comprises an amount of time sufficient to transmit a reconfiguration request from said one node to said at least one other node, wherein receipt of said reconfiguration request causes said at least one other node to enter a quiescent state.

38. The article of manufacturing of claim 36, wherein said predetermined period of time comprises an amount of time sufficient for protocols currently running on said network to complete execution.

39. The article of manufacturing of claim 38, wherein said protocols comprise one of a heart beat, join, death, or node reachability protocol.

40. The article of manufacturing of claim 36, wherein said predetermined period of time comprises an amount of time sufficient for a protocol currently running on said network to perform a predetermined number of retries plus a predetermined amount of time between each retry, wherein after attempting said predetermined number of retries, said protocol completes execution.

41. The article of manufacturing of claim 40, wherein said protocol comprises one of a heart beat, join, death, or node reachability protocol.

42. The article of manufacturing of claim 36, wherein said computer readable program code means for reconfiguring said one node reconfigures without any communication to said node from said at least one other node of said plurality of nodes.

43. The article of manufacturing of claim 36, wherein said computer readable program code means for reconfiguring said one node comprises computer readable program code means for refraining from observing said change in topology at said one node during a grace period, wherein said grace period comprises a predetermined period of time sufficient to allow said at least one other node of said plurality of nodes to exit a quiescent state, and upon termination of said grace period, for observing said change in topology at said one node.

44. The article of manufacturing of claim 36, wherein said reconfiguration request results from addition or removal of a node or of at least one other network to said network.

45. The article of manufacturing of claim 36, where said reconfiguration request results from a change in address of a node of said network.

46. The article of manufacturing of claim 36, wherein said network is reconfigured without interrupting currently executing protocols.

47. The article of manufacturing of claim 36, wherein said network is reconfigured without a global synchronization protocol.

48. The article of manufacturing of claim 36, further comprising computer readable program code means for transmitting, upon entering said quiescent state, a reconfiguration request from said one node to said at least one other node, wherein receipt of said reconfiguration request causes said at least one other node to enter a quiescent state.

49. The article of manufacturing of claim 48, wherein said reconfiguration request comprises one of a message having a reconfiguration sequence identifier and a message having a configuration sequence identifier different from a configuration identifier of said one node.

50. The article of manufacturing of claim 36, wherein said network comprises a plurality of interconnected computing networks together implementing a distributed node and adapter status monitoring system.

51. The article of manufacturing of claim 36, further comprising computer readable program code means for preventing, by said node when in said quiescent state, the execution of new protocols by ignoring proclaim, join, node connectivity, and group connectivity messages and by no longer monitoring heartbeat messages.

52. The article of manufacturing of claim 36, further comprising computer readable program code means for transmitting, by said node when in said quiescent state, proclaim, heartbeat, node connectivity, and group connectivity messages with a reconfiguration sequence identifier to propagate reconfiguration requests to said at least one other node.

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